EPA is reopening the comment period for the 2013 draft New Hampshire small MS4 permit to take comments on new language in section 2.1.1, 2.2 (including all subsections), and 2.3.6 (including all subsections), Appendix F (excluding attachments) and Appendix H (excluding attachments) only, comments received pertaining to other sections of the 2013 draft MS4 permit will not be addressed prior to final issuance of the MS4 permit for New Hampshire. The following pages contain the proposed language Appendix F (excluding attachments), and will completely replace Appendix F(excluding attachments) of the 2013 draft permit released February 12, 2013.

APPENDIX F

Requirements Related to Approved Total Maximum Daily Loads

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I. **Chloride TMDLs**

Beaver Brook[1]; Dinsmore Brook[2]; North Tributary to Canobie Lake[3]; Policy-Porcupine Brook[4]

- Municipalities: Derry, Londonderry, Salem and Windham; and non-traditional and transportation MS4s discharging to these waterbodies
- Water Quality Goal of TMDLs: The goal for these TMDL is for the chloride concentrations in the affected water bodies to meet State of New Hampshire surface water quality criteria for Class B waterbodies. According to Env-Ws 1703.21, the water quality criteria for chloride in nontidal Class B waterbodies to protect aquatic life is that concentrations should not exceed 860 mg/L for acute exposures or 230 mg/L for chronic exposures. Acute aquatic life criteria are based on an average concentration over a one-hour period and chronic criteria are based on an average concentration over a period of four days (EPA, 1991) The frequency of violations for either acute or chronic criteria should not be more than once every three years, on average (EPA, 1991).
- Goal of the Implementation Plan: To meet the load allocations as determined by NHDES through reduced deicing loads.
- Measures to address the TMDLs: Permittees that operate regulated MS4s located within these municipalities that discharge to the identified impaired waters must reduce chloride discharges to support achievement of the WLA included in the approved TMDLs. For this purpose, the permittee shall develop a Salt Reduction Plan that includes specific actions designed to achieve salt reduction on municipal roads and facilities, and on private facilities that drain to the MS4. The Salt Reduction Plan shall be completed within one (1) year of the effective date of the permit and shall include, at a minimum:

a. For municipally maintained surfaces:

(i) Tracking of the amount of salt applied to all municipally owned and maintained surfaces and reporting of salt use using the UNH Technology Transfer Center online tool (http://www.roadsalt.unh.edu/Salt/) beginning in the year 2 annual report;
(ii) Planned activities for salt reduction on municipally owned and maintained surfaces, which may include but are not limited to:

- Operational changes such as pre-wetting, pre-treating the salt stockpile, increasing plowing prior to de-icing, monitoring of road surface temperature, etc.;

[1] Total Maximum Daily Load (TMDL) Study For Waterbodies in the Vicinity of the I-93 Corridor from Massachusetts to Manchester, NH: Beaver Brook in Derry and Londonderry, NH (2008)
[2] Total Maximum Daily Load (TMDL) Study For Waterbodies in the Vicinity of the I-93 Corridor from Massachusetts to Manchester, NH: Dinsmore Brook in Windham, NH (2008)
[3] Total Maximum Daily Load (TMDL) Study For Waterbodies in the Vicinity of the I-93 Corridor from Massachusetts to Manchester, NH: North Tributary to Canobie Lake in Windham, NH (2008)
[4] Total Maximum Daily Load (TMDL) Study For Waterbodies in the Vicinity of the I-93 Corridor from Massachusetts to Manchester, NH: Policy-Porcupine Brook in Salem and Windham, NH (2008)

• Implementation of new or modified equipment providing pre-wetting capability, better calibration rates, or other capability for minimizing salt use;
• Training for municipal staff and/or contractors engaged in winter maintenance activities;
• Adoption of guidelines for application rates for roads and parking lots (see NHDES, Chloride Reduction Implementation Plan for Dinsmore Brook, App. J and K (February 2011), http://des.nh.gov/organization/commissioner/pip/publications/wd/documents/wd-11-13.pdf ;: Winter Parking Lot and Sidewalk Maintenance Manual (Revised edition June 2008) http://www.pca.state.mn.us/publications/parkinglotmanual.pdf; and the application guidelines on page 17 of Minnesota Snow and Ice Control: Field Handbook for Snow Operators (September 2012) http://www.mnltap.umn.edu/publications/handbooks/documents/snowice.pdf for examples);
• Regular calibration of spreading equipment;
• Designation of no-salt and/or low salt zones;
• Public education regarding impacts of salt use, methods to reduce salt use on private property, modifications to driving behavior in winter weather, etc.; and
• Measures to prevent exposure of salt stockpiles (if any) to precipitation and runoff; and

(iii) An estimate of the total tonnage of salt reduction expected by each activity; and

(iv) A schedule for implementation of planned activities including immediate implementation of operational and training measures, continued annual progress on other measures, and full implementation of the Plan by the end of the permit term.

b. For privately maintained facilities that drain to the MS4:

(i) Identification of private parking lots with 10 or more parking spaces draining to the MS4;

(ii) Requirements for private parking lot owners and operators and private street owners and operators (1) that any commercial salt applicators used for applications of salt to their parking lots or streets be trained and certified in accordance with Env-Wq 2203, and (2) to report annual salt usage within the municipal boundaries using the UNH Technology Transfer Center online tool (http://www.roadsalt.unh.edu/Salt/).

(iii) Requirements for new development and redevelopment to minimize salt usage, and to track and report amounts used using the UNH Technology Transfer Center online tool (http://www.roadsalt.unh.edu/Salt/).

II. Bacteria TMDLs

Hampton/Seabrook Harbor[5]

- Municipalities: Hampton and Seabrook; and non-traditional and transportation MS4s discharging to these waterbodies
- Water Quality Goal of TMDL: The goal for this TMDL is for the bacteria concentrations throughout Hampton/Seabrook Harbor to meet the water quality standards for the designated uses of the water body that are affected by bacteria. These uses include shellfishing, primary contact recreation (swimming), and secondary contact recreation (boating). The water quality standard is the most stringent for shellfishing: a geometric mean for fecal coliform of less than 14 MPN/100 ml and a 90th percentile of less than 43 MPN/100 ml as determined using National Shellfish Sanitation Program (NSSP) protocols (RSA 485A: 8, V; ISSC, 1999). A 47 percent reduction in the total bacteria loading is necessary to meet the TMDL.
- Goal of the Implementation Plan: To remove all human sources of bacteria to the estuary to the extent practicable.

Little Harbor[6]

- Municipalities: New Castle, Portsmouth and Rye; and non-traditional and transportation MS4s discharging to these waterbodies
- Water Quality Goal of the TMDL: The goal for this TMDL is for the bacteria concentration in the Little Harbor assessment unit to meet the water quality standards for the designated uses of the water body that are affected by bacteria. These uses include shellfishing, primary contact recreation (swimming), and secondary contact recreation (boating). The water quality standard is the most stringent for shellfishing: a geometric mean for fecal coliform of less than 14 MPN/100 ml and a 90th percentile of less than 43 MPN/100 ml as determined using National Shellfish Sanitation Program (NSSP) protocols (RSA 485A: 8, V; ISSC, 1999). The bacteria load to Little Harbor must be reduced by 12 percent to achieve the goal of the TMDL.
- Goal of the Implementation Plan: To achieve water quality standards for bacteria in the Little Harbor assessment unit and to characterize the bacteria concentrations and bacteria sources in the Berrys Brook/ Witch Creek assessment unit.

Bacteria Impaired Waters Statewide (Table F-1)[7] and 58 Beach Bacteria Impaired Waters (Table F-1)[8]

- Municipalities: see Table F-1; includes non-traditional and transportation MS4s discharging to those waterbody assessment segments listed on Table F-1
- Water Quality Goal of the TMDL: The goal for this TMDL is for the bacteria concentration in each waterbody to meet the water quality standards for the designated uses of the water body that are affected by bacteria. These uses include shellfishing, primary contact recreation (swimming), and secondary contact recreation (boating).

[5] Hampton/Seabrook Harbor Bacteria TMDL, May 2004
[6] Little Harbor Bacteria TMDL, June 2006
[7] Final Report New Hampshire Statewide TMDL for Bacteria Impaired Waters (2010)
[8] Final Report TMDL Report for 58 Bacteria Impaired Waters in New Hampshire (2011)

• Goal of the Implementation Plan: The implementation plan incorporated within the TMDL Report provides general guidance for addressing water pollution caused by pathogenic bacteria in New Hampshire's surface waters. It recommends that implementation be conducted on a watershed basis and that more specific watershed plans be developed, where appropriate, to focus and prioritize appropriate restoration measures.

A. Measures to address Bacteria TMDLs listed above:

The operators of MS4s listed above or in Tables F-1 shall implement the Additional or Enhanced BMPs below to reduce bacteria or pathogen discharges from their MS4:

1) Additional or Enhanced BMPs

i. The permittee remains subject to the requirements of Part 2.3. of the permit and shall include the following enhancements to the BMPs required by Part 2.3 of the permit:

1. Part 2.3.3. Public Education: In addition to Public Education requirements of Part 2.3.3 and/or Appendix H Part I or II., the permittee or its agents shall disseminate educational materials to dog owners at the time of issuance or renewal of a dog license, or other appropriate time. Education materials shall describe the detrimental impacts of improper management of pet waste, requirements for waste collection and disposal, and penalties for non-compliance. The permittee shall also provide information to owners of septic systems about proper maintenance in any catchment that discharges to a water body impaired for bacteria or pathogens.

2. Part 2.3.4 Illicit Discharge: The permittee shall implement the illicit discharge program required by this permit. Catchments draining to any waterbody impaired for bacteria or pathogens shall be designated either Problem Catchments or HIGH priority in implementation of the IDDE program.

Primary Town	Waterbody Name	Assessment Unit #	Impairment
AMHERST	BABOOSIC LAKE	NHLAK700060905-01-01	Escherichia coli
AMHERST	BABOOSIC LAKE - TOWN BEACH	NHLAK700060905-01-02	Escherichia coli
AMHERST	SOUHEGAN RIVER	NHRIV700060906-16	Escherichia coli
BEDFORD	PATTEN BROOK	NHRIV700060803-12	Escherichia coli
BEDFORD	RIDDLE BROOK	NHRIV700060905-18	Escherichia coli
BEDFORD	MCQUADE BROOK	NHRIV700060905-13	Escherichia coli

Primary Town	Waterbody Name	Assessment Unit #	Impairment
CHESTER	TOWLE BROOK - TO PANDOLPIN DAM	NHRIV600030802-10	Escherichia coli
DERRY	ISLAND POND - CHASE'S GROVE	NHLAK700061101-01-02	Escherichia coli
DERRY	BEAVER LAKE - GALLIEN'S BEACH	NHLAK700061203-02-02	Escherichia coli
DERRY	HOODS POND - TOWN BEACH	NHLAK700061203-03-02	Escherichia coli
DERRY	RAINBOW LAKE - KAREN-GENA BEACH	NHLAK700061203-05-02	Escherichia coli
DERRY	BEAVER BROOK	NHRIV700061203-09	Escherichia coli
DOVER	SALMON FALLS RIVER	NHEST600030406-01	Enterococcus
DOVER	SALMON FALL RIVER	NHEST600030406-01	Fecal colilform
DOVER	COCHECO RIVER	NHEST600030608-01	Enterococcus
DOVER	COCHECO RIVER	NHEST600030608-01	Fecal colilform
DOVER	BELLAMY RIVER NORTH	NHEST600030903-01-01	Fecal Coliform
DOVER	BELLAMY RIVER SOUTH	NHEST600030903-01-02	Enterococcus
DOVER	BELLAMY RIVER SOUTH	NHEST600030903-01-02	Fecal Coliform
DOVER	UPPER PISCATAQUA RIVER-NH-NORTH	NHEST600031001-01-01	Fecal colilform
DOVER	DOVER WWTF SZ-NH	NHEST600031001-01-02	Enterococcus
DOVER	UPPER PISCATAQUA RIVER-NH-SOUTH	NHEST600031001-01-03	Fecal colilform
DOVER	COCHECO RIVER - WATSON-WALDRON DAM POND	NHIMP600030608-02	Escherichia coli
DOVER	COCHECO RIVER - CENTRAL AVE DAM	NHIMP600030608-04	Escherichia coli
DOVER	BELLAMY RIVER - SAWYERS MILL DAM POND	NHIMP600030903-02	Escherichia coli
DOVER	FRESH CREEK POND	NHLAK600030608-01	Escherichia coli
DOVER	BLACKWATER BROOK-CLARK BROOK	NHRIV600030608-02	Escherichia coli
DOVER	COCHECO RIVER	NHRIV600030608-03	Escherichia coli
DOVER	REYNERS BROOK	NHRIV600030608-04	Escherichia coli
DOVER	COCHECO RIVER	NHRIV600030608-05	Escherichia coli
DOVER	INDIAN BROOK	NHRIV600030608-06	Escherichia coli
DOVER	BERRY BROOK	NHRIV600030608-15	Escherichia coli
DOVER	JACKSON BROOK	NHRIV600030608-16	Escherichia coli
DOVER	BELLAMY RIVER	NHRIV600030903-09	Escherichia coli

Primary Town	Waterbody Name	Assessment Unit #	Impairment
DOVER	VARNEY BROOK - CANNEY BROOK	NHRIV600030903-11	Escherichia coli
DOVER	GARRISON BROOK	NHRIV600030903-13	Escherichia coli
DURHAM	OYSTER RIVER	NHEST600030902-01-03	Enterococcus
DURHAM	CROMMENT CREEK	NHEST600030904-04-02	Fecal Coliform
DURHAM	ADAMS POINT SOUTH - COND APP	NHEST600030904-04-06	Enterococcus
DURHAM	ADAMS POINT SOUTH - COND APP	NHEST600030904-04-06	Fecal Coliform
DURHAM	ADAMS POINT TRIB	NHEST600030904-06-11	Fecal Coliform
DURHAM	OYSTER RIVER MOUTH	NHEST600030904-06-17	Fecal Coliform
DURHAM	OYSTER RIVER	NHIMP600030902-04	Escherichia coli
DURHAM	BEARDS CREEK	NHIMP600030902-06	Escherichia coli
DURHAM	OYSTER RIVER	NHRIV600030902-05	Escherichia coli
DURHAM	LONGMARSH BROOK - BEAUDETTE BROOK	NHRIV600030902-06	Escherichia coli
DURHAM	HAMEL BROOK	NHRIV600030902-08	Escherichia coli
DURHAM	COLLEGE BROOK	NHRIV600030902-09	Escherichia coli
DURHAM	RESERVOIR BROOK	NHRIV600030902-10	Escherichia coli
DURHAM	LITTLEHOLE CREEK	NHRIV600030902-11	Escherichia coli
EXETER	EXETER RIVER - EXETER RIVER DAM I	NHIMP600030805-04	Escherichia coli
EXETER	EXETER RIVER	NHRIV600030805-02	Escherichia coli
EXETER	NORRIS BROOK	NHRIV600030806-01	Escherichia coli
FARMINGTON	MAD RIVER	NHRIV600030601-08	Escherichia coli
GOFFSTOWN	GLEN LAKE - PUBLIC (STATE OWNED) BEACH	NHLAK700060607-01-02	Escherichia coli
GOFFSTOWN	NAMASKE LAKE	NHLAK700060607-02	Escherichia coli
GOFFSTOWN	HARRY BROOK	NHRIV700060607-15	Escherichia coli
GOFFSTOWN	CATAMOUNT BROOK	NHRIV700060607-20	Escherichia coli
GREENLAND	WINNICUT RIVER	NHEST600030904-01	Fecal colilform
GREENLAND	UNKNOWN RIVER - WINNICUT RIVER DAM POND	NHIMP600030901-02	Escherichia coli
GREENLAND	WINNICUT RIVER-BARTON BROOK-MARSH BROOK-THOMPSON BROOK	NHRIV600030901-02	Escherichia coli
GREENLAND	HAINES BROOK	NHRIV600030901-03	Escherichia coli
GREENLAND	NORTON BROOK	NHRIV600030901-06	Escherichia coli
GREENLAND	FOSS BROOK	NHRIV600030904-05	Escherichia coli
GREENLAND	SHAW BROOK	NHRIV600030904-13	Escherichia coli
GREENLAND	UNNAMED BROOK	NHRIV600030904-21	Escherichia coli

Primary Town	Waterbody Name	Assessment Unit #	Impairment
HAMPSTEAD	WASH POND - TOWN BEACH	NHLAK700061101-03-02	Escherichia coli
HAMPSTEAD	SUNSET LAKE - SUNSET PARK BEACH	NHLAK700061101-03-03	Escherichia coli
HAMPTON	TAYLOR RIVER	NHEST600031003-03	Fecal Coliform
HAMPTON	HAMPTON FALLS RIVER	NHEST600031004-01-03	Fecal Coliform
HAMPTON	TAYLOR RIVER (LOWER)	NHEST600031004-02-02	Fecal Coliform
HAMPTON	HAMPTON RIVER MARINA SZ	NHEST600031004-09-08	Enterococcus
HAMPTON	ATLANTIC OCEAN - HAMPTON BEACH STATE PARK BEACH	NHOCN000000000-02-10	Enterococcus
HAMPTON FALLS	TAYLOR RIVER	NHEST600031003-02	Fecal Coliform
HOLLIS	SILVER LAKE - STATE PARK BEACH	NHLAK700061001-02-02	Escherichia coli
HOLLIS	WITCHES BROOK	NHRIV700061001-02	Escherichia coli
HOOKSETT	MERRIMACK RIVER	NHRIV700060802-14-02	Escherichia coli
HOOKSETT	MESSER BROOK	NHRIV700060802-09	Escherichia coli
HUDSON	ROBINSON POND	NHLAK700061203-06-01	Escherichia coli
HUDSON	ROBINSON POND - TOWN BEACH	NHLAK700061203-06-02	Escherichia coli
HUDSON	LAUNCH BROOK	NHRIV700061203-26	Escherichia coli
KINGSTON	COUNTRY POND - LONE TREE SCOUT RESV. BEACH	NHLAK700061403-03-03	Escherichia coli
KINGSTON	GREAT POND - KINGSTON STATE PARK BEACH	NHLAK700061403-06-02	Escherichia coli
KINGSTON	GREAT POND - CAMP BLUE TRIANGLE BEACH	NHLAK700061403-06-03	Escherichia coli
LEE	LITTLE RIVER	NHRIV600030707-07	Escherichia coli
LEE	LAMPREY RIVER	NHRIV600030709-07	Escherichia coli
LEE	OYSTER RIVER	NHRIV600030902-03	Escherichia coli
LEE	OYSTER RIVER - CHELSEY BROOK	NHRIV600030902-04	Escherichia coli
LEE	WENDYS BROOK	NHRIV600030902-16	Escherichia coli
MADBURY	JOHNSON CREEK - GERRISH BROOK	NHRIV600030902-13	Escherichia coli
MADBURY	BELLAMY RIVER - KELLY BROOK - KNOX MARSH BROOK	NHRIV600030903-08	Escherichia coli
MANCHESTER	MERRIMACK RIVER - AMOSKEAG DAM	NHIMP700060802-04	Escherichia coli

Primary Town	Waterbody Name	Assessment Unit #	Impairment
MANCHESTER	CRYSTAL LAKE-TOWN BEACH	NHLAK700060703-02-02	Escherichia coli
MANCHESTER	COHAS BROOK - LONG POND BROOK	NHRIV700060703-05	Escherichia coli
MANCHESTER	UNNAMED BROOK - FROM PINE ISLAND POND TO MERRIMACK RIVER	NHRIV700060703-09	Escherichia coli
MANCHESTER	MERRIMACK RIVER	NHRIV700060803-14-02	Escherichia coli
MANCHESTER	UNNAMED BROOK - TO PISCATAQUOG RIVER	NHRIV700060607-35	Escherichia coli
MANCHESTER	RAYS BROOK	NHRIV700060802-15	Escherichia coli
MERRIMACK	NATICOOK LAKE - WASSERMAN PARK BEACH	NHLAK700061002-04-02	Escherichia coli
MERRIMACK	MERRIMACK RIVER	NHRIV700060804-11	Escherichia coli
MERRIMACK	SOUHEGAN RIVER	NHRIV700060906-18	Escherichia coli
MERRIMACK	SOUHEGAN RIVER	NHRIV700060906-25	Escherichia coli
MERRIMACK	PENNICHUCK BROOK - WITCHES BROOK	NHRIV700061001-07	Escherichia coli
MERRIMACK	MERRIMACK RIVER	NHRIV700061002-13	Escherichia coli
MILFORD	SOUHEGAN RIVER - MCLANE DAM	NHIMP700060906-08	Escherichia coli
MILFORD	PURGATORY BROOK	NHRIV700060904-07	Escherichia coli
MILFORD	SOUHEGAN RIVER	NHRIV700060904-14	Escherichia coli
MILFORD	GREAT BROOK - OX BROOK	NHRIV700060906-12	Escherichia coli
MILFORD	SOUHEGAN RIVER	NHRIV700060906-13	Escherichia coli
MILTON	MILTON POND - MILTON POND REC AREA BEACH	NHLAK600030404-01-03	Escherichia coli
MILTON	DAMES BROOK	NHRIV600030601-07	Escherichia coli
NASHUA	NASHUA RIVER - JACKSON PLANT DAM POND	NHIMP700040402-05	Escherichia coli
NASHUA	NASHUA RIVER	NHRIV700040402-08	Escherichia coli
NASHUA	NASHUA RIVER	NHRIV700040402-09	Escherichia coli
NASHUA	MERRIMACK RIVER	NHRIV700061002-14	Escherichia coli
NASHUA	SALMON BROOK - HASSELLS BROOK - OLD MAIDS BROOK - HALE BROOK	NHRIV700061201-05	Escherichia coli
NASHUA	SALMON BROOK	NHRIV700061201-07	Escherichia coli
NASHUA	MERRIMACK RIVER	NHRIV700061206-24	Escherichia coli

Primary Town	Waterbody Name	Assessment Unit #	Impairment
NASHUA	NASHUA RIVER - NASHUA CANAL DIKE	NHIMP700040402-03	Escherichia coli
NEW CASTLE	ATLANTIC OCEAN - NEW CASTLE BEACH	NHOCN000000000-02-02	Enterococcus
NEWINGTON	PICKERING BROOK	NHEST600030904-04-03	Enterococcus
NEWINGTON	PICKERING BROOK	NHEST600030904-04-03	Fecal Coliform
NEWINGTON	FABYAN POINT	NHEST600030904-04-04	Fecal Coliform
NEWINGTON	GREAT BAY - COND APPR	NHEST600030904-04-05	Enterococcus
NEWINGTON	GREAT BAY - COND APPR	NHEST600030904-04-05	Fecal Coliform
NEWINGTON	ADAMS POINT MOORING FIELD SZ	NHEST600030904-06-10	Enterococcus
NEWINGTON	U LITTLE BAY (SOUTH)	NHEST600030904-06-12	Enterococcus
NEWINGTON	U LITTLE BAY (SOUTH)	NHEST600030904-06-12	Fecal Coliform
NEWINGTON	LOWER LITTLE BAY	NHEST600030904-06-13	Fecal Coliform
NEWINGTON	LOWER LITTLE BAY GENERAL SULLIVAN BRIDGE	NHEST600030904-06-15	Fecal Coliform
NEWINGTON	U LITTLE BAY (NORTH)	NHEST600030904-06-16	Enterococcus
NEWINGTON	U LITTLE BAY (NORTH)	NHEST600030904-06-16	Fecal Coliform
NORTH HAMPTON	CHAPEL BROOK	NHEST600031002-03	Fecal colilform
NORTH HAMPTON	ATLANTIC OCEAN - STATE BEACH	NHOCN000000000-02-09	Enterococcus
NORTH HAMPTON	ATLANTIC OCEAN - STATE BEACH	NHOCN000000000-02-09	Fecal Coliform
PELHAM	LONG POND - TOWN BEACH	NHLAK700061205-02-02	Escherichia coli
PELHAM	BEAVER BROOK	NHRIV700061203-22	Escherichia coli
PELHAM	BEAVER BROOK - TONYS BROOK	NHRIV700061205-01	Escherichia coli
PLAISTOW	KELLY BROOK - SEAVER BROOK	NHRIV700061401-04	Escherichia coli
PORTSMOUTH	LOWER PISCATAQUA RIVER - SOUTH	NHEST600031001-02-02	Enterococcus
PORTSMOUTH	UPPER SAGAMORE CREEK	NHEST600031001-03	Fecal colilform
PORTSMOUTH	UPPER SAGAMORE CREEK	NHEST600031001-03	Enterococcus
PORTSMOUTH	LOWER SAGAMORE CREEK	NHEST600031001-04	Enterococcus
PORTSMOUTH	SOUTH MILL POND	NHEST600031001-09	Enterococcus
PORTSMOUTH	NORTH MILL POND	NHEST600031001-10	Enterococcus

Primary Town	Waterbody Name	Assessment Unit #	Impairment
PORTSMOUTH	PICKERING BROOK	NHRIV600030904-06	Escherichia coli
PORTSMOUTH	SAGAMORE CREEK	NHRIV600031001-03	Escherichia coli
PORTSMOUTH	LOWER HODGSON BROOK	NHRIV600031001-04	Escherichia coli
PORTSMOUTH	UPPER HODGSON BROOK	NHRIV600031001-05	Escherichia coli
PORTSMOUTH	PAULS BROOK - PEASE AIR FORCE BASE	NHRIV600031001-07	Escherichia coli
PORTSMOUTH	BORTHWICK AVE TRIBUTARY	NHRIV600031001-09	Escherichia coli
PORTSMOUTH	NEWFILEDS DITCH	NHRIV600031001-10	Escherichia coli
ROCHESTER	SALMON FALLS RIVER - BAXTER MILL DAM POND	NHIMP600030405-04	Escherichia coli
ROCHESTER	COCHECO RIVER - CITY DAM	NHIMP600030603-01	Escherichia coli
ROCHESTER	COCHECO RIVER - GONIC DAM POND	NHIMP600030607-02	Escherichia coli
ROCHESTER	AXE HANDLE BROOK - HOWARD BROOK	NHRIV600030602-03	Escherichia coli
ROCHESTER	COCHECO RIVER	NHRIV600030603-06	Escherichia coli
ROCHESTER	COCHECO RIVER	NHRIV600030603-08	Escherichia coli
ROCHESTER	WILLOW BROOK	NHRIV600030603-10	Escherichia coli
ROCHESTER	ISINGLASS RIVER	NHRIV600030607-10	Escherichia coli
ROLLINSFORD	SALMON FALLS RIVER - SOUTH BERWICK DAM	NHIMP600030406-04	Escherichia coli
ROLLINSFORD	FRESH CREEK - TWOMBLY BROOK	NHRIV600030608-08	Escherichia coli
ROLLINSFORD	ROLLINS BROOK	NHRIV600030608-10	Escherichia coli
ROLLINSFORD	FRESH CREEK	NHRIV600030608-11	Escherichia coli
RYE	WITCH CREEK	NHEST600031002-01-01	Enterococcus
RYE	WITCH CREEK	NHEST600031002-01-01	Fecal Coliform
RYE	BERRYS BROOK	NHEST600031002-01-02	Enterococcus
RYE	BERRYS BROOK	NHEST600031002-01-02	Fecal Coliform
RYE	UNNAMED BROOK TO BASS BEACH	NHEST600031002-04	Fecal colilform
RYE	PARSONS CREEK	NHEST600031002-05	Fecal colilform
RYE	ATLANTIC OCEAN - PIRATES COVE BEACH	NHOCN000000000-02-04	Enterococcus
RYE	ATLANTIC OCEAN - CABLE BEACH	NHOCN000000000-02-05	Enterococcus
RYE	ATLANTIC OCEAN - SAWYER BEACH	NHOCN000000000-02-06	Enterococcus

Primary Town	Waterbody Name	Assessment Unit #	Impairment
RYE	ATLANTIC OCEAN - SAWYER BEACH	NHOCN000000000-02-06	Fecal Coliform
RYE	ATLANTIC OCEAN - JENNESS BEACH	NHOCN000000000-02-07	Enterococcus
RYE	BASS BROOK BEACH OUTFALL AREA	NHOCN000000000-03-01	Enterococcus
RYE	BASS BROOK BEACH OUTFALL AREA	NHOCN000000000-03-01	Fecal Coliform
RYE	ATLANTIC OCEAN - BASS BEACH	NHOCN000000000-03-02	Enterococcus
RYE	ATLANTIC OCEAN - BASS BEACH	NHOCN000000000-03-02	Fecal Coliform
RYE	BERRY'S BROOK	NHRIV600031002-01	Escherichia coli
RYE	UNNAMED BROOKS - TO ATLANTIC OCEAN AT CONCORD POINT	NHRIV600031002-03	Escherichia coli
SALEM	CAPTAIN POND - CAPTAIN'S BEACH	NHLAK700061102-03-02	Escherichia coli
SALEM	CAPTAIN POND - CAMP OTTER SWIM AREA BEACH	NHLAK700061102-03-03	Escherichia coli
SALEM	ARLINGTON MILL RESERVOIR- SECOND ST BEACH	NHLAK700061101-04-02	Escherichia coli
SALEM	MILLVILLE LAKE - TOWN BEACH	NHLAK700061102-06-02	Escherichia coli
SANDOWN	EXETER RIVER	NHRIV600030802-03	Escherichia coli
SEABROOK	MILL CREEK	NHEST600031004-07	Enterococcus
SEABROOK	BLACKWATER RIVER	NHEST600031004-08-04	Enterococcus
SEABROOK	SEABROOK HARBOR BEACH	NHEST600031004-09-05	Enterococcus
SEABROOK	CAINS BROOK - NOYES POND	NHIMP600031004-06	Escherichia coli
SEABROOK	ATLANTIC OCEAN - SEABROOK TOWN BEACH	NHOCN000000000-02-11	Enterococcus
SEABROOK	CAIN'S BROOK	NHRIV600031004-10	Escherichia coli
SEABROOK	CAIN'S BROOK	NHRIV600031004-12	Escherichia coli
SEABROOK	UNNAMED BROOK TO CAINS MILL POND	NHRIV600031004-21	Escherichia coli
SOMERSWORTH	SALMON FALLS RIVER - LOWER GREAT FALLS DAM	NHIMP600030406-02	Escherichia coli

Primary Town	Waterbody Name	Assessment Unit #	Impairment
SOMERSWORTH	SALMON FALLS RIVER	NHRIV600030405-14	Escherichia coli
SOMERSWORTH	SALMON FALLS RIVER	NHRIV600030406-03	Escherichia coli
SOMERSWORTH	WILLAND POND	NHLAK600030405-03	Escherichia coli

Table F-1 – Waterbodies and Primary Municipalities subject to a Bacteria TMDL.

III. Lake and Pond Phosphorus TMDLs

Baboosic Lake, Country Pond, Dorrs Pond, Flints Pond, Greenwood Pond, Halfmoon Pond, Hoods Pond, Horseshoe Pond, Nutt Pond, Pine Island Pond, Robinson Pond, Sebbins Pond, Showell Pond, Stevens Pond

- Municipalities: Amherst, Bedford, Derry, Hollis, Hudson, Kingston, Manchester, Merrimack, Raymond, Sandown, other municipalities with MS4 discharges to these waterbodies and non-traditional and transportation MS4s discharging to these waterbodies
- Water Quality Goal of the TMDL is to establish Total Phosphorus (TP) loading targets that, if achieved, will result in consistency with the State of New Hampshire Water Quality criteria. Water quality that is consistent with state standards is, a priori, expected to protect designated uses. The lake phosphorus TMDLs were developed with the following objectives:

  • Describe potential sources and estimate the existing phosphorus loading to the lake;
  • Estimate the loading capacity;
  • Allocate the load among sources;
  • Provide alternate allocation scenarios;
  • Suggest elements to be included in an implementation plan;
  • Suggest elements to be included in a monitoring plan;
  • Provide reasonable assurances that the plans will be acted upon; and
  • Describe public participation in the TMDL process.

- Goal of the Implementation Plan: provide recommendations for future BMP work and necessary water quality improvements. The recommendations are intended to provide options of potential watershed and lake management strategies that can improve water quality to meet target loads.
- Measures to address the TMDLs: Permittees that operate regulated MS4s located within these municipalities that discharge to the identified impaired waters must reduce phosphorus discharges to support achievement of the WLA included in the approved TMDLs.

1. To address phosphorus, the permittee shall develop a Lake Phosphorus Control Plan (LPCP) designed to reduce the amount of phosphorus in stormwater discharges from its MS4 to the impaired waterbody or its tributaries consistent with assumptions and requirements of the WLA for the phosphorous loadings published in the applicable phosphorus TMDL (see Table F-2 for TMDL names and links to applicable phosphorus TMDLs). Table F-2, Appendix F provides the percent reductions in stormwater total phosphorus load for each municipality to be consistent with the assumptions and requirements of the WLA.

Water Body Name	Primary Town	% Reduction In TP Load for all Sources	TMDL Link
Baboosic Lake	Amherst	44%	Baboosic TMDL
Horseshoe Pond	Merrimack	76%	Horseshoe TMDL
Nutt Pond	Manchester	71%	Nutt TMDL
Pine Island Pond	Manchester	73%	Pine Island TMDL
Robinson Pond	Hudson	48%	Robinson TMDL
Sebbins Pond	Bedford	64%	Sebbins TMDL
Showell Pond	Sandown	69%	Showell TMDL
Stevens Pond	Manchester	50%	Stevens TMDL
Hoods Pond	Derry	80%	Hoods TMDL
Halfmoon Pond	Kingston	74%	Halfmoon TMDL
Greenwood Pond	Kingston	69%	Greenwood TMDL
Flints Pond	Hollis	40%	Flints TMDL
Dorrs Pond	Manchester	62%	Dorrs TMDL
Country Pond	Kingston	52%	Country TMDL
Governors Lake	Raymond	47%	Governors TMDL

Table F-2: Waterbodies and Primary Municipalities subject to a Lake or Pond Phosphorus TMDL

i. The permittee shall develop a Lake Phosphorous Control Plan (LPCP) as part of its written SWMP and update the LPCP in annual reports pursuant to Part 4.4 of the Permit. The LPCP shall describe measures the permittee will undertake to reduce the amount of phosphorous in MS4 discharges.

ii. The LPCP shall be implemented in accordance with the following schedule and contain the following elements:

a. LPCP Implementation Schedule – The permittee shall complete the implementation of its LPCP as soon as possible but no later than 15 years after the effective date of the permit.

b. The LPCP shall be implemented in accordance with the following schedule and contain the following elements:

Number	LPCP Component and Milestones	Completion Date
1	Legal Analysis	2 years after permit effective date
2	Funding source assessment	3 years after permit effective date
3	Define LPCP scope (LPCP Area)	4 years after permit effective date
4	Calculate Baseline Phosphorus, Allowable Phosphorus Load and Phosphorus Reduction	4 years after permit effective date

	Requirement	
5	Description of planned nonstructural and structural controls	5 years after permit effective date
6	Description of Operation and Maintenance (O&M) Program	5 years after permit effective date
7	Implementation schedule	5 years after permit effective date
8	Cost and Funding Source Assessment	5 years after permit effective date
9	Complete written LPCP	5 years after permit effective date
10	Full implementation of nonstructural controls.	6 years after permit effective date
11	Performance Evaluation.	6 and 7 years after permit effective date
12	1. Performance Evaluation. 2. Full implementation of all structural controls used to demonstrate that the total phosphorus export rate (P_{exp}) from the LPCP Area in mass/yr is equal to or less than the applicable Allowable Phosphorus Load(P_{allow}) plus the applicable Phosphorus Reduction Requirement (P_{RR}) multiplied by 0.80 $P_{exp} \leq P_{allow} + (P_{RR}\ X\ 0.80)$	8 years after permit effective date
13	Performance Evaluation	9 years after permit effective date
14	1. Performance Evaluation. 2. Update LPCP 3. Full implementation of all structural controls used to demonstrate that the total phosphorus export rate (P_{exp}) from the LPCP Area in mass/yr is equal to or less than the applicable Allowable Phosphorus Load(P_{allow}) plus the applicable Phosphorus Reduction Requirement (P_{RR}) multiplied by 0.60 $P_{exp} \leq P_{allow} + (P_{RR}\ X\ 0.60)$ OR that the permittee has reduced their phosphorus export rate by 30kg/year (whichever is greater, unless full Phosphorus Reduction Requirement has been met)	10years after permit effective date
15	Performance Evaluation	11 and 12 years after permit effective date
16	1. Performance Evaluation. 2. Full implementation of all structural controls used to demonstrate that the total phosphorus export rate (P_{exp}) from the LPCP Area in mass/yr is equal to or	13years after permit effective date

	less than the applicable Allowable Phosphorus Load(P_{allow}) plus the applicable Phosphorus Reduction Requirement (P_{RR}) multiplied by 0.30 $P_{exp} \leq P_{allow} + (P_{RR}\ X\ 0.30)$	
17	Performance Evaluation	14 years after permit effective date
18	1. Performance Evaluation. 2. Full implementation of all structural controls used to demonstrate that the total phosphorus export rate (P_{exp}) from the LPCP Area in mass/yr is equal to or less than the applicable Allowable Phosphorus Load(P_{allow}) $P_{exp} \leq P_{allow}$	15years after permit effective date

Table F-3: LPCP components and milestones

c. Description of LPCP Components:

Legal Analysis- The permittee shall develop and implement an analysis that identifies existing regulatory mechanisms available to the MS4 such as by-laws and ordinances and describe any changes to these regulatory mechanisms that may be necessary to effectively implement the LPCP. This may include the creation or amendment of financial and regulatory authorities. The permittee shall adopt necessary regulatory changes by the end of the permit term.

Scope of the LPCP (LPCP Area) - The permittee shall indicate the area in which the permittee plans to implement the LPCP, this area is known as the "LPCP Area". The LPCP Area can either be: 1) the drainage area to the impaired waterbody within the jurisdiction of the permittee (for a municipality this would be the municipal boundary) or 2) the MS4 regulated area only that is within the drainage area of the impaired waterbody and in the jurisdiction of the permittee. Although the phosphorus control measures need only be applied in those areas in the regulated portion of the permittee's MS4 that are within the impaired waterbody's watershed (see permit Part 1.2.1), permittees may find more cost effective opportunities to reduce phosphorus discharges outside of the regulated area. Therefore, the permittee should consider implementation of measures in non-regulated areas, especially where such implementation requires little or no additional resources; or where such implementation would have a significant and demonstrable effect on phosphorus loading. If the permittee chooses to implement the LPCP only in the regulated MS4 within the watershed of the impaired lake or pond, then the permittee may only demonstrate compliance with the milestones in Table F-3 through controls implemented within the regulated MS4 area (structural and non-structural controls implemented outside of the MS4 regulated area may not be counted towards the meeting the Allowable Phosphorus Load for the purposes of permit compliance).

Calculate Baseline Phosphorus Load (P_{base}), Phosphorus Reduction Requirement (P_{RR}) and Allowable Phosphorus Load (P_{allow}) –Permittees shall calculate their numerical Allowable Phosphorus Load and Phosphorus Reduction Requirement in mass/yr by first estimating their Baseline Phosphorus Load in mass/yr from its LPCP Area consistent with the

methodology in Attachment 1 to Appendix F or the applicable TMDL, the baseline shall only be estimated using land use phosphorus export coefficients in Attachment 1 to Appendix F or the applicable TMDL methodology and not account for phosphorus reductions resulting from implemented structural BMPs completed to date. Table F-2 contains the percent phosphorus reduction required from urban stormwater consistent with the TMDL of each impaired waterbody. The permittee shall apply the applicable required percent reduction in Table F-2 to the calculated Baseline Phosphorus Load to obtain the permittee specific Allowable Phosphorus Load. The Allowable Phosphorus Load shall then be subtracted from the Baseline Phosphorus Load to obtain the permittee specific Phosphorus Reduction Requirement in mass/yr.

Description of planned non-structural controls – The permittee shall describe the non-structural stormwater control measures to be implemented to support the achievement of the milestones in Table F-3. The description of non-structural controls shall include the planned measures, the areas where the measures will be implemented, and the annual phosphorus reductions that are expected to result from their implementation. Annual phosphorus reduction from non-structural BMPs shall be calculated consistent with Attachment 2 to Appendix F. The permittee shall update the description of planned non-structural controls as needed to support the achievement of the milestones in Table F-3, including an update in the updated written LPCP 10 years after the permit effective date.

Description of planned structural controls – The permittee shall develop a priority ranking of areas and infrastructure within the municipality for potential implementation of phosphorus control practices. The ranking shall be developed through the use of available screening and monitoring results collected during the permit term either by the permittee or another entity and the mapping required pursuant to Part 2.3.4.6 of the Permit. The permittee shall also include in this prioritization a detailed assessment of site suitability for potential phosphorus control measures based on soil types and other factors. The permittee shall coordinate this activity with the requirements of Part 2.3.6.e. of the Permit. A description and the result of this priority ranking shall be included in the LPCP. The permittee shall describe the structural stormwater control measures necessary to support achievement of the milestones in Table F-3. The description of structural controls shall include the planned measures, the areas where the measures will be implemented, and the annual phosphorus reductions in units of mass/yr that are expected to result from their implementation. Structural measures to be implemented by a third party[9] may be included in the LPCP. Annual phosphorus reduction from structural BMPs shall be calculated consistent with Attachment 3 to Appendix F. The permittee shall update the description of planned structural controls as needed to support the achievement of the milestones in Table F-3, including an update in the updated written LPCP 10 years after the permit effective date.

Description of Operation and Maintenance (O&M) Program for all planned and existing structural BMPs – The permittee shall establish an Operation and Maintenance Program for all structural BMPs being claimed for phosphorus reduction credit as part the LPCP. This includes BMPs implemented to date as well as BMPs to be implemented. The Operation and Maintenance Program shall become part of the PCP and include: (1) inspection and maintenance schedule for each BMP according to BMP design or

[9] This does not include structural BMPs installed in compliance with any other NPDES stormwater permit that requires phosphorus reductions consistent with a TMDL.

manufacturer specification and (2) program or department responsible for BMP maintenance.

Implementation Schedule – An initial schedule for implementing the BMPs, including, as appropriate: funding, training, purchasing, construction, inspections, monitoring, O&M and other assessment and evaluation components of implementation. Implementation of planned BMPs must begin upon completion of the LPCP, and all non-structural BMPs shall be fully implemented within six years of the permit effective date. Where planned structural BMP retrofits or major drainage infrastructure projects are expected to take additional time to construct, the permittee shall within four years of the effective date of the permit have a schedule for completion of construction consistent with the reduction requirements in Table F-3. The permittee shall complete the implementation of its LPCP as soon as possible or at a minimum in accordance with the milestones set forth in Table F-3. The implementation schedule shall be updated as needed to support the achievement of the milestones in Table F-3, including an update in the updated written LPCP 10 years after the permit effective date.

Cost and funding source assessment – The permittee shall estimate the cost for implementing its LPCP and describe known and anticipated funding mechanisms. The permittee shall describe the steps it will take to implement its funding plan. This may include but is not limited to conceptual development, outreach to affected parties, and development of legal authorities.

Complete written LPCP – The permittee must complete the written LPCP 5 years after permit effective date. The complete LPCP shall include item numbers 1-8 in Table F-3. The permittee shall make the LPCP available to the public for public comment during the LPCP development. EPA encourages the permittee to post the LPCP online to facilitate public involvement. The LPCP shall be updated as needed with an update 10 years after the permit effective date at a minimum to reflect changes in BMP implementation to support achievement of the phosphorus export milestones in Table F-3. The updated LPCP shall build upon the original LPCP and include additional or new BMPs the permittee will use to support the achievement of the milestones in Table F-3.

Performance Evaluation – The permittee shall evaluate the effectiveness of the LPCP by tracking the phosphorus reductions achieved through implementation of structural and non-structural BMPs and tracking increases in phosphorus loading from the LPCP Area beginning six years after the effective date of the permit. Phosphorus reductions shall be calculated consistent with Attachment 2 (non-structural BMP performance), Attachment 3 (structural BMP performance) and Attachment 1 (reductions through land use change), to Appendix F for all BMPs implemented to date[10]. Phosphorus load increases resulting from development shall be calculated consistent with Attachment 1 to Appendix F. Phosphorus loading increases and reductions in units of mass/yr shall be added or subtracted from the calculated Baseline Phosphorus Load to estimate the yearly phosphorous export rate from

[10] Annual phosphorus reductions from structural BMPs installed in the LPCP Area prior to the effective date of this permit shall be calculated consistent with Attachment 3 to Appendix F. Phosphorus Reduction Credit for previously installed BMPs will only be given if the Permittee demonstrates that the BMP is performing up to design specifications or certifies that the BMP has been properly maintained and inspected according to manufacturer design or specifications and provides records of maintenance and inspections. This certification or demonstration shall be part of the annual performance evaluation during the year credit is claimed for the previously installed BMP.

the LPCP Area in mass/yr. The permittee shall also include all information required in Part III.2 of this Appendix in each performance evaluation.

2. Reporting

Beginning 6 years after the permit effective date, the permittee shall include the following in each annual report submitted pursuant to Part 4.4 of the Permit:

1. All non-structural control measures implemented during the reporting year along with the phosphorus reduction in mass/yr (P_{NSred}) calculated consistent with Attachment 2 to Appendix F
2. Structural controls implemented during the reporting year and all previous years including:
    a. Location information of structural BMPs (GPS coordinates or street address)
    b. Phosphorus reduction from all structural BMPs implemented to date in mass/yr (P_{Sred}) calculated consistent with Attachment 3 to Appendix F
    c. Date of last completed maintenance for each Structural control
3. Phosphorus load increases due to development over the previous reporting period and incurred to date (P_{DEVinc}) calculated consistent with Attachment 1 to Appendix F.
4. Estimated yearly phosphorus export rate (P_{exp}) from the LPCP Area calculated using Equation 1. Equation 1 calculates the yearly phosphorus export rate by subtracting yearly phosphorus reductions through implemented nonstructural controls and structural controls to date from the Baseline Phosphorus Load and adding loading increases incurred through development to date. This equation shall be used to demonstrate compliance with the phosphorus reduction milestones required as part of each phase of the LPCP.

$$P_{exp}\left(\frac{mass}{yr}\right) = P_{base}\left(\frac{mass}{yr}\right) - \left(P_{Sred}\left(\frac{mass}{yr}\right) + P_{NSred}\left(\frac{mass}{yr}\right)\right) + P_{DEVinc}\left(\frac{mass}{yr}\right)$$

Equation 1. Equation used to calculate yearly phosphorus export rate from the chosen LPCP Area. P_{exp}=Current phosphorus export rate from the LPCP Area in mass/year. P_{base}=baseline phosphorus export rate from LPCP Area in mass/year. P_{Sred}= yearly phosphorus reduction from implemented structural controls in the LPCP Area in mass/year. P_{NSred}= yearly phosphorus reduction from implemented non-structural controls in the LPCP Area in mass/year. Area in mass/year. P_{DEVinc}= yearly phosphorus increase resulting from development since the year baseline loading was calculated in the LPCP Area in mass/year.

5. Certification that all structural BMPs are being inspected and maintained according to the O&M program specified as part of the PCP. The certification statement shall be:

    I certify under penalty of law that all source control and treatment Best Management Practices being claimed for phosphorus reduction credit have been inspected, maintained and repaired in accordance with manufacturer or design specification. I certify that, to the best of my knowledge, all Best Management Practices being claimed for a phosphorus reduction credit are performing as originally designed.

3. As an alternative to tracking phosphorus reductions as described in Parts III.1.-2 above, the permittee may choose to evaluate the effectiveness of the LPCP or evaluate the effectiveness of previously implemented BMPs or programs at restoring the impaired waterbody by using monitoring or other means. In this case, the permittee shall work with NHDES to develop a monitoring plan or other assessment plan the permittee will use to evaluate the effectiveness of the LPCP or other work the permittee has conducted

in restoring the waterbody. The permittee shall work with NHDES to develop the alternative analysis plan and keep the written plan as part of their SWMP. Until the production of an NHDES approved written alternative analysis plan, the permittee remains subject to the requirements described in Parts III.1-2 above.

Mercury Impaired Waters Statewide[11]

- Pollutant: Mercury
- Municipalities: All
- Water Quality Goal of the TMDL: To reduce atmospheric deposition sources of mercury to achieve water quality standards for mercury in all surface waters.
- Measures to address the TMDL: None required.

[11] Northeast Regional Mercury TMDL (2007)